DYNAMIC WEB-BASED DRIVER TASK ASSIGNMENT CALENDAR SYSTEM PROJECT

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ABSTRACT

Dynamic Web-Based Driver Task Assignment Calendar System (DCS) is a system specially design for Setiausaha Kerajaan Pahang (SUK) to help staff manages booking for customer and driver assignment task. Due to old traditional paper booking vehicle and paper assign driver's task method, SUK decided to have a proper system to manage all the stuffs, and bookings. This system is developed by using open source tool which is notepad, XAMPP and MySQL. Besides that DCS also implement Rapid Application Development (RAD) methodology as a guideline to keep track the entire tasks complete on time.

ABSTRAK

Dynamic Web-Based Driver Task Assignment Calendar System (DCS) secara dijemah dalam bahasa, boleh diberi maksud sebagai Web dinamik untuk membahagi tugasan kepada pemandu yang berasaskan dengan calendar. (DCS) merupakan satu sistem yang direka khas untuk Setiausaha Kerajaan Pahang (SUK) untuk membantu kakitangannya menguruskan tempahan bagi pelanggan dan membahagikan tugasan antara pemandu. Disebabkan kaedah membahagikan tugasan antara pemandu amatlah menyusahkan, SUK memutuskan untuk mempunyai sistem yang lebih sesuai untuk mengurus semua barang-barang, dan tempahan,maka terbinalah system DCS.Sistem ini dibangunkan dengan menggunakan alat sumber terbuka iaitu notepad, XAMPP dan MySQL. Selain itu DCS juga mengamalkan metodologi Rapid (RAD) sebagai garis panduan untuk memantau tugas-tugas keseluruhan boleh melengkap pada masanya.

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PART I

INTRODUCTION

In part 1, an introduction to scheduling will be presented, followed by the problem statement, the objective and scope of the project.

1.1 Introduction

This is the continuous project of previous student named: Nurkhairunnisa Binti Zainudin under supervision of Mr. Muhammad Idaham Bin Umar Ong entitled with: Transport Management System (TMS) using Web-based. This part of report briefly explains about the background, problem statement, and the objectives of the dynamic web-based driver task assignment system calendar (DSC) project.

1.1.1 Background

Transportation is one of the leading indicators of the society's economic growth. Unfortunately, if it is left unorganized, the indicator shows a declining trend as time passes. Currently most of the transportation system is still using the traditional way to assign tasks to respective drivers, where this method requires the staff to write out the pairing by hand and word by word. This does not integrate well with a human's lifestyle. On the other hand, customers need to fill in all the transport reservation form with handwriting. A lot of problems will arise when staff starts to check the records for the bookings again.

Dynamic web-based driver task assignment system calendar (DSC) is a system that allows the staff to manage the booking information which includes the customer's

account, driver's task assignment and checking the reservation record with more effective method. Besides that, this system also manages the transportation system for other communities such as Institut Kemahiran Ikhtisas Pahang (IKIP), Kolej Islam Pahang Sultan Ahmad Shah (KIPSAS), Kolej Poly-Tech MARA (KPTM) and etc. which are all under Setiausaha Kerajstaaan Negeri Pahang (SUK) [1].

For customer's side, customer can view the types of transport that can be booked with ease and make the choice of selecting which transport vehicle. Customer does not need to fill in any forms manually to book the transport because this system provides a reservation form and latest information about the transport availability. Lastly, the customer's profile will be saved in the database for future use. The information management system implements the process [2] of Dynamic web-based driver task assignment system calendar (DSC) reservation form that the user requested. The data that must be sent includes pick-up date, drop-off date, transport types, rental duration, method of payment, and etc. This data must be sent to the supplier rental companies. Then, the information management system also controls the user's request that must be completed by customer. Customer's profile can be updated any time. When user completes updating it, the data must be submitted to the rental companies system.

1.1.2 Problem Statement

Dynamic web-based driver task assignment system calendar (DSC) is designed to manage the transportation booking, driver's task assignment and also the maintenance of growing transportation vehicles and also in order to solve the problems faced by SUK Pahang which is a lack of proper technological development to monitor or regulate the number of vehicles and drivers

Firstly, traditional paper assignment tasks are not convenient because it consumes a lot time to assign tasks to the driver, For instance, some vehicles that have been double booked and there are some cases where the driver assigned to two different tasks at the same time. Moreover, all the data are not being kept in a secure location. Information might lost easily. Therefore, Dynamic Web-Based Driver Task Assignment System Calendar (DSC) provides a more organized and secure database to store all these vital data.

Secondly, customer needs to come over and book the transport with several forms to fill in. In addition, due to the old fashion paper recorder, it is extremely hard for the staff to check over the old record. For the transportation part, that vehicles lack maintenance after a lengthy period of using it, hence there is some feedback from customer regarding the current condition of vehicles they rented.

Poor management of transportation had led to the ineffectiveness, the miscommunication between staff and driver might cause their company to gain less profit. Thus a well planning and perfect organized management of a transportation organization is the key of success. Hopefully this system improves and arise satisfaction between customer and staff in order to reduce the workload of staffs.

1.1.3 Objective

This sub clause of the project shall define the objectives of the project are:

- To develop Dynamic web-based driver task assignment system calendar (DSC) that increases efficiency among customer, driver and staff.
- To assist Setiausaha Kerajaan Negeri (SUK) Pahang create a better transportation management via user-friendly calendar and dynamic calendar's interface.
- To reduce the need for the cost of communication like calls and the tradition paper task assignment by replacing store execution tasks and communication within a closed-loop system that can reduce the cost and streamlined communication.

1.2 Review of previous work/research and relationship to current project

This part consists of five reviews of the previous works that is related to Dynamic Web-Based Driver Task Assignment System Calendar (DSC).

Figure 1 Five existing systems

There are five systems or software included Soloniris Calendar Management Software, School Assetment Manager, Transport Management, Car Rental Management System and Google Personal Calendar System. These system and software share some similarity and different of each of the system will review one by one.

1.2.1: Saloniris Calendar Management Software

There are some similar parts between Saloniris Calendar Management Software with the Dynamic Web-Based Driver Task Assignment System Calendar (DSC).Both are using calendar based to assign task to stuff.

Figure 2: Soloniris Calendar Management (Home Page)

Saloniris calendar management software is not open source software, user need to pay €99 for 12 months to own this software. It consists of several versions like

standard package, professional package and also premium package along with phone app support. This software is specially design for salon management usage, it also support phone application to make appointment. The premium version has an extra reminder feature to remind customer for the appointment date. However, it is software and not a web application.

1.2.2: School Asset Manager

There are some similar parts between school asset management system with the dynamic web-based driver task assignment system calendar (DSC).Both are involved 4 modules in the system, which is staff, user, system and admin.

Figure 3: School Assets Manager (Home Page)

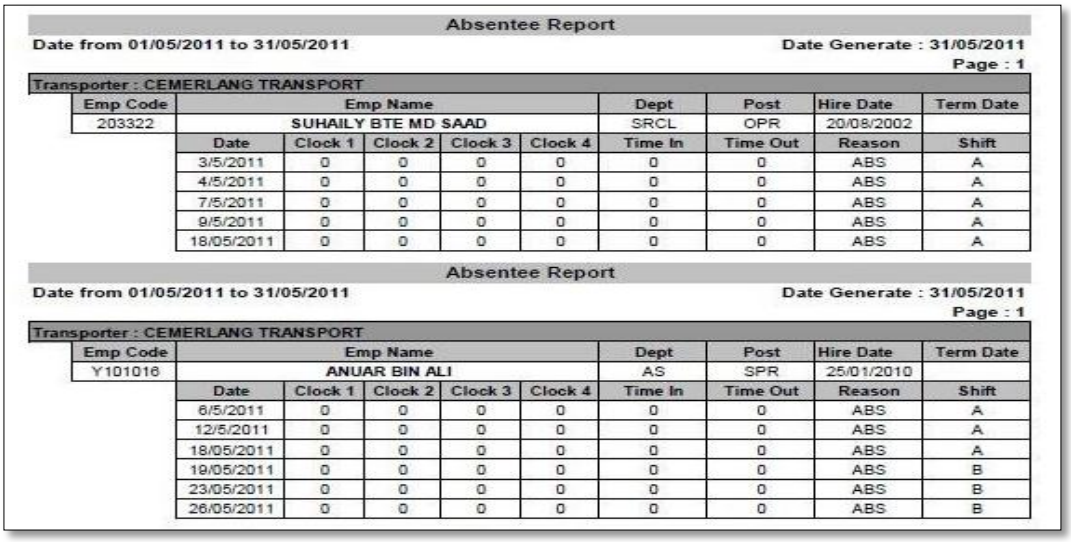
School Asset Manager Web based management system is created to help school manage their properties such as sports equipment, mobile assets including PCs and laptops to software, musical instruments and etc. This system provides convenience to schools that owns more than thousand assets. The unique part of the system is the cloud based system packed with ready-to-use school-focused functionality. In addition, each school can bespeak in the system to meet its individual needs [3].

The system helps user to save time by speeding up and simplifying asset-related process, whilst also saving money by improving asset life cycle, increasing utilization and reducing new purchases. This system offer several functions like, simplify auditing,

complete life cycle management, flexible reporting and lastly this system able to allocate & locate assets.

1.2.3: Transport Management System

There are some similar parts between transport management system with the dynamic web-based driver task assignment system calendar (DSC).Both system transportation manage system.



Absentee Report

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Transporter : CEMERLANG TRANSPORT

Emp Code	Emp Name	Dept	Post	Hire Date	Term Date
203322	SUHAILY BTE MD SAAD	SRCL	OPR	20/08/2002	

Date	Clock 1	Clock 2	Clock 3	Clock 4	Time In	Time Out	Reason	Shift
3/5/2011	0	0	0	0	0	0	ABS	A
4/5/2011	0	0	0	0	0	0	ABS	A
7/5/2011	0	0	0	0	0	0	ABS	A
9/5/2011	0	0	0	0	0	0	ABS	A
18/05/2011	0	0	0	0	0	0	ABS	A

Absentee Report

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Transporter : CEMERLANG TRANSPORT

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Y101016	ANUAR BIN ALI	AS	SPR	25/01/2010	

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18/05/2011	0	0	0	0	0	0	ABS	A
19/05/2011	0	0	0	0	0	0	ABS	B
23/05/2011	0	0	0	0	0	0	ABS	B
26/05/2011	0	0	0	0	0	0	ABS	B

Figure 4: Transport Management system (Home Page)

Transport Management is a system created mainly to help human resource department to arrange task between driver and vehicle, it simplifies the task of an staff, besides that, it also monitors the employee's transportation movement and automatically calculate the salary of driver and cost consumption of subsidy from company for each employee.

This system is very easy to use, since every single button has metadata to guide those fresh/ novice user. The system can be time saving simply just by updating the attendance from time to time by the staff. The main advantage of the system is that user can track which is the employee's highest movement area, and hence an accurate and precise analysis data will be created for future reference. Based on the analysis, user can be alert to those unauthorized worker that uses the transport service, supervise route of

every transport, be aware of the employee who always absent from the transport service

1.2.4: Car Rental Management System

The car rental management system is slightly common with the Dynamic Web-Based Driver Task Assignment System Calendar (DSC), it is because SUK (Pahang) also allow customer from communities to book their transport vehicle

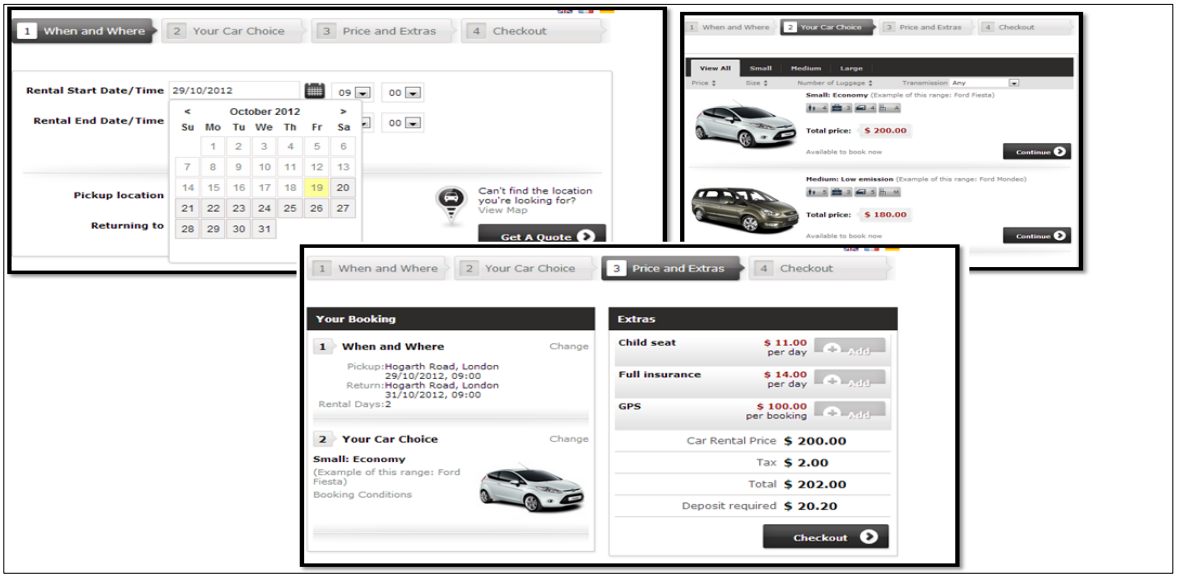

Figure 5: Car rental management system

Car rental management system is an online system used to manage car booking of customer. There are a few snap shots of the system which vividly indicate how customer books a car from the organization where it is similar to the DSC system that will be developed soon. This system is slightly similar to the client SUK Pahang's request which also offers vehicle booking for customer.

This web application has simple yet neat interface design. The horizontal breadcrumbs ease the car booking process and make the booking process very organized. It illustrates the booking process step by step and the booking system ends with generate booking receipt. Every step is very clear and without confusing the user.

1.2.5: Google Personal Calendar Management System

Google Personal Calendar Management System is similar to Dynamic Web-Based Driver Task Assignment System Calendar (DSC), both system offer online calendar based to schedule tasks.

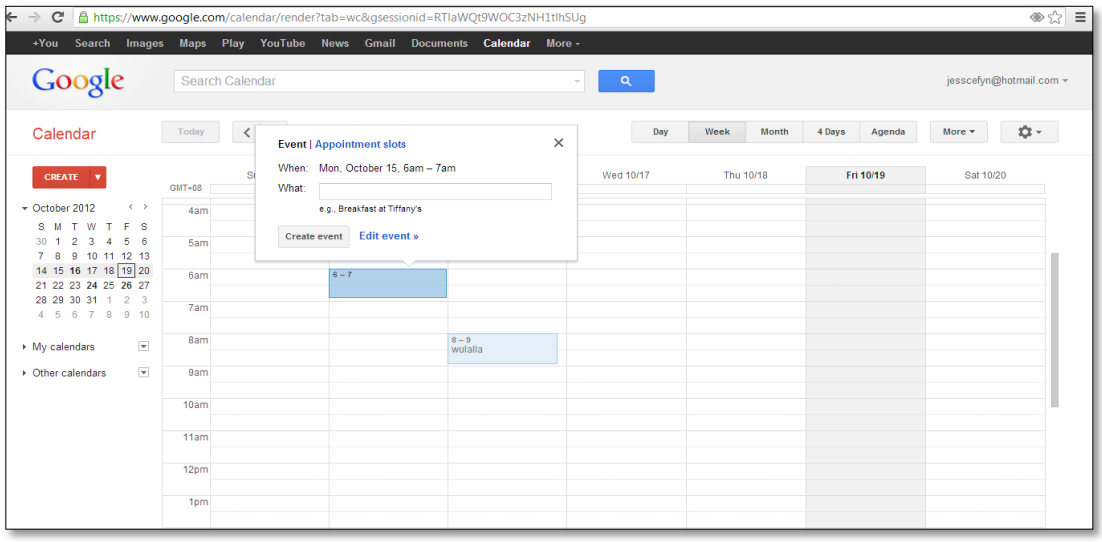

Figure 6: Google personal calendar management system

Google Personal Calendar Management System is an impressive online calendar which is a free web application offered by Google. It is a static calendar system which allows user to manage their daily task, easily keep track of the daily event without missing out them. The interface is simple and the system is easy to use. This free calendar system provided a few viewing mode, user either can view in terms of daily, weekly or monthly which is very user-friendly. Besides that, each of the view can be printed. Google calendar allows user to be able to jot down their daily task by using natural language, and using multiple choices of colors to highlight user's task.

1.2.6 Comparison between the five existing systems

In the table below, a summarize table has been made based on the review above.

Table 1: Comparison between existing systems

SYSTEM	ADAVANTAGES	LIMITATION
Saloniris Calendar Management Software (SCM)	• Well organized for daily appointments • Send an alert to customer via phone • Not an open source	• Weak interface. • Expensive • Only suitable for small business
School Asset Manager (SAM)	• Provided a systematic management form school asset in more organize way. • A huge database to store every asset's information in orderly, easier user for future review. • Provided a lot of function for user to explore, such as flexible reporting	• Only focuses on the asset management of the school. • Not easy to use in a short period, due to ambiguous user's guideline. • Expensive

Transport Management	• Standardized the entire work tasks for every vehicles and drivers. • Provides greater visibility between management level and worker level. • Auto calculate salary of staffs	• Only suitable for human resource (HR) department.
Car Rental Management System	• Manage the car booking from customer • Consists of tremendous functions such as: car booking, information of car, promotion.	• Only support car rental management part.
Google Personal Calendar Management System	• Manage user's daily task • Simple and easy to use	• No error handling function(clash) • Static calendar

According to the pros and cons of the existing system, there are some good features that will be taken to develop dynamic web base driver task assignment system calendar (DSC).For example, the Google's user-friendly calendar system, car rental's easy booking process and idea from the transport management system also will be included in the develop of dynamic web-based driver task assignment system calendar.

1.3 Explain the current system and its limitation

1.3.1 Customer Booking Vehicle

Figure 1.3.1 shows the flow of manual booking vehicle implementing in Setiausha Kerajaan Pahang (SUK).

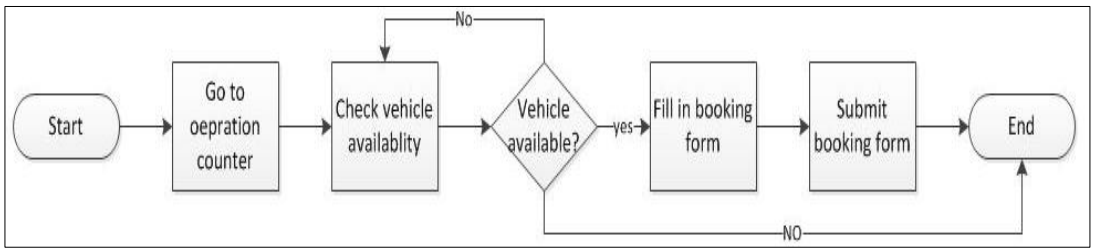

Figure 7: Customer booking vehicle

Customer need to go to the operation counter and check availability of vehicle, if the vehicle is booked, customer can check another vehicle's availability or end the booking process. After identify the vehicle status, customer need to fill the booking form and submit the booking form. Staff will contact customer about the booking whether successful or fail.

1.3.2 Driver Check Schedule

Figure 1.3.2 shows the flow of driver check schedule implementing in Setiausha Kerajaan Pahang (SUK).

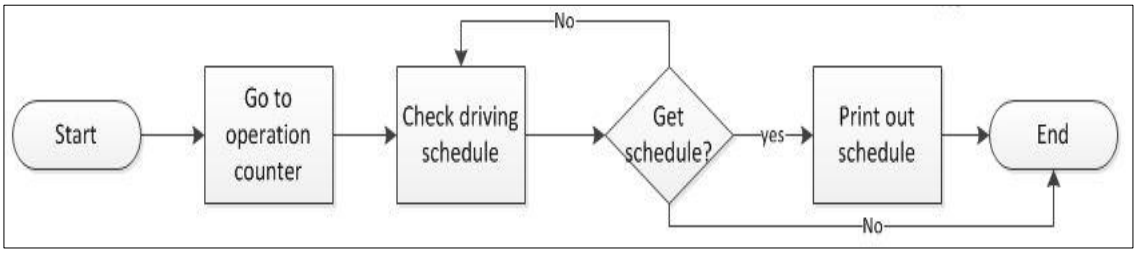

Figure 8: Driver check schedule

When drivers wants to know their schedule, they need to go to the operation counter and check for schedule, if there is no schedule, driver may end the process or recheck again. Driver may print out their schedule.

1.3.3 Staff Manages Booking and Assign Driver.

Figure 1.3.3 shows the flow of staff manages booking and assign driver implementing in Setiausha Kerajaan Pahang (SUK).

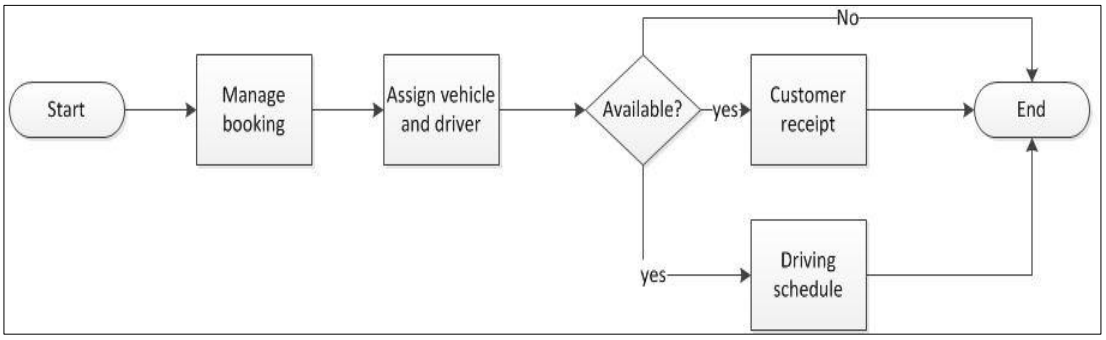

Figure 9: Staff manages booking and assign driver

When staff wants to manage booking, they need to check back the booking form filled by customer, followed by assign driver and vehicle, if there is insufficient of vehicle or driver, they need to contact customer to change their booking detail, if customer cannot make it, the booking form will be disapproved. Only the successful booking will generate receipt for customer and schedule for driver.

1.3.4 Limitation of Current System

This sub-topic will discuss about what are the limitations that cannot be done by the system.

- Inconvenient
  whenever driver and customers need to perform their action, they need to go to the operation counter; it is very waste time back and forth within operation counter.

- Insecure

  All the booking forms is written down on a paper, where staff assign driver's task also jotted down on paper, it is very dangerous if all the papers not documented properly.

- Cost increased

  Communication cost is increased in term of call, fax between all users

1.4 Explanation of terminology

Terminology is the term of study that will be used in this project. Term that used in this technical report consist specific meaning, where this sub topic will justify all the specific terms used in this report with explanation. Refer to Appendix A

1.5 Methods of approach

The methods of approach illustrated by the Figure 10 below, which shows the project structure overview. It clearly indicates the application background idea mainly about. Besides that it shows the type of platform, database, software development methodology, programming language and also web server will be implement during the project development.

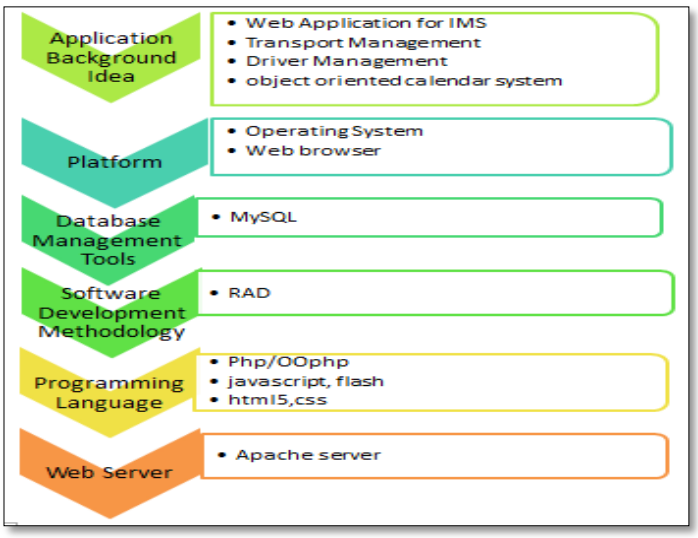

Figure 10: DCS structure overview

1.5.1 Application Background Idea

This sub topic will exposed more ideas to user about the current technique on the web application, inventory management system and calendar management system.

1.5.1.1Web Application

A web application in technical term can be linked with World Wide Web (www). This triple "W" is an application that can be accessed over a network no matter is internet or an intranet. It is supported by various web browsers over the internet, for instance, Google Chrome and Internet Explorer. The term used in web application is coded in a browser-supported programming language like, HTML, CSS and JavaScript .Web application provide a brilliant function which allow user interact with server by retrieve data on web page or web application's database. The prominent advantage of web application is to allow user edit or maintain the web application without interrupting and installing software on use's computer is the strongest supporting point for its popularity.

1.5.1.2 Inventory Management System (IMS)

Inventory Management System refers to the professional management of maintain and it keep track all the goods from the moment it reached till the moment it is sold. The management are monitoring by using a software or web application. Inventory management system is mainly about specification of the goods and placement of stocked goods. Inventory management system can produce more accurate and precise result in stock, order and in transit. There is no more assumption from running the business after implementing the Inventory Management System (IMS).

1.5.1.3 Calendar Management System

Calendar Management System Software is a system providing a convenient of daily task management in a flow of a collaborative environment. These procedures can be manually inserted or dynamic insertion of task's detail. It reschedules the daily task